Assessing Increased Product Line Commonality’s Effect on Assembly

We present results of an experiment focused on quantifying effects on assembly productivity and product quality by introducing a product platform and increasing commonality between variants in a product family. The experiment was set up with 50 engineering students, who over three rounds produced a family of LEGO car models. Over the rounds a product platform was introduced and the Commonality Index was increased from 47.8% to 88.4%. Compared to productivity and quality results show an increased output of 118% and a decrease in product defects by 31% when applying a platform-based approach.

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